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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,890

06/29/2006

Francois Po Shin Chin

SCI-P001

4142

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BAKER & DANIELS LLP
300 NORTH MERIDIAN STREET
SUITE 2700
INDIANAPOLIS, IN 46204

EXAMINER

LUGO, DAVID B

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

03/20/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,890	Applicant(s) SHIN CHIN ET AL.	
	Examiner DAVID B. LUGO	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/10/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. U.S. Patent No. 7,391,715 in view of Dabak U.S. Patent Application Publication No. 2004/0071118 and Applicant's disclosure of prior art.

3. Regarding claims 1 and 7, Lee discloses a receiver in Figure 2B comprising a sequence extension remover (221) for removing a predetermined number of chips from a predetermined position of the received signal to form a modified signal, a converter (S/P 222) for performing serial to parallel conversion, along with a despreader (224), an orthogonal transform block for transforming symbols from a first domain to a second domain (FFT 223), a deinterleaver (24), and a second converter (P/S 226) for performing parallel to serial conversion.

4. Lee does not expressly disclose that the despreader is placed prior to the orthogonal transform block. Dabak discloses a multi-carrier system where the positions of the despreader and the FFT are reversed such that the despreader operates on the received signal prior to the FFT (see Figs. 4, 8). It would have been obvious to one of ordinary skill in the art to include the teachings of Dabak in the receiver of Lee because reversing the despreading and FFT reduces the computations required (para. 0042).

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5. Lee further does not show an equalizer, or that the deinterleaver is prior to the parallel to serial converter. Applicant discloses in prior art Figure 1(b) an equalizer 15 coupled to a deinterleaver 16 prior to a parallel to serial converter. One of ordinary skill in the art would recognize that the position of the deinterleaver does not change the function of the receiver, as it will operate in substantially the same manner. Accordingly, positioning the deinterleaver prior to the serial to parallel converter is deemed a design consideration. Further, it would have been obvious to one of ordinary skill in the art to include an equalizer in the receiver of Lee and in order to compensate for distortions introduced on the received data.

6. Regarding claims 2 and 8, the sequence extension remover is arranged to remove a guard interval (col. 5, lines 24-26). It is well known in the art to include a cyclic prefix in a guard interval as they both help avoid intersymbol interference (see Dabak, para. 0032, Fig. 4). Accordingly, it would have been obvious to one of ordinary skill in the art to use a cyclic prefix in the guard interval as a matter of design consideration.

7. Regarding claims 3 and 9, the orthogonal transform block is a FFT block (223).

8. Regarding claims 4 and 10, the first domain is the time domain and the second domain is the frequency domain.

9. Regarding claims 5 and 11, Dabak discloses that the FFT is performed at a lower data rate since it occurs after the despreading and hence does not occur at the chip rate (para. 0014), which is higher than the data symbol rate (para. 0009), where the ratio of the chip rate to the symbol rate is known as the processing gain of the receiver.

10. Regarding claims 6 and 12, Lee discloses that the receiver is part of a VSF-OFCDM system (col. 1, lines 31-40).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID B. LUGO whose telephone number is (571)272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3066. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David B. Lugo/
Primary Examiner, Art Unit 2611
3/17/09